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Progress made in the implementation of and follow-up to the outcomes of the World Summit on the Information Society at the regional and international levels

Report of the Secretary-General

Executive summary

This report has been prepared in response to the request by the Economic and Social Council, in its resolution 2006/46, to the United Nations Secretary-General to inform the Commission on Science and Technology for Development (CSTD) on the implementation of the outcomes of the World Summit on the Information Society (WSIS) as part of his annual reporting to the Commission. It reviews progress made in the implementation of the outcomes of WSIS at the international and regional levels and identifies obstacles and constraints encountered. The report has been prepared by the UNCTAD secretariat based on information provided by entities in the United Nations system and elsewhere on their efforts in 2009 to implement the outcome of WSIS, with a view to sharing best and effective practices and lessons learned.

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Introduction

1. This report has been prepared in response to the Economic and Social Council (ECOSOC) resolutions 2006/46, 2007/8, 2008/3 and 2009/7, which request the United Nations Secretary-General to inform the Commission on Science and Technology for Development (CSTD) on the implementation of the outcomes of the World Summit on the Information Society (WSIS), based on inputs from relevant United Nations and other entities as appropriate.

2. In its resolutions 2008/3, the Council further recommended that in submitting their reports to the CSTD, action line facilitators bring to the attention of the Commission obstacles and difficulties encountered by all stakeholders in regard to the commitments and recommendations pertaining to their respective action lines at the regional and international levels and make proposals for possible action to the Commission, whenever deemed necessary.

3. In its resolution 2009/7, the Council urged all United Nations bodies to contribute to the report on the implementation of the World Summit outcomes by listing the decisions and resolution of their relevant organs as well as their relevant plans and activities.

4. The present report incorporates analyses of responses provided by 18 international and regional organizations to a letter from the Secretary-General of UNCTAD, inviting inputs on trends, achievements and obstacles in WSIS outcomes implementation.[1] The report does not claim to provide a comprehensive account of all efforts at WSIS implementation but focuses on major initiatives undertaken since February 2009, as reported by the relevant organizations.[2]

I. Key trends and development in the Information Society

A. Connectivity is improving – LDCs are still lagging behind

5. Connectivity continues to improve, especially with regard to mobile telephones. Recent estimates suggest that the number of mobile subscriptions will reach 5 billion in 2010.[3] To date, improved access to information and communication technologies (ICTs) represent one of the most positive developments in the least developed countries (LDCs) in the past decade (UNCTAD, 2009; ITU, 2010)[4]. Improvements have been particularly significant in the case of mobile telephony, with major implications for reaping greater development gains for their use. Between 2000 and 2008, the average number of mobile subscriptions per 100 people in LDCs rose from less than 1 to about 20. In some LDCs, the penetration has reached very high levels. For example, Maldives in 2008 boasted a penetration of more 100 per cent and in the Equatorial Guinea and Gambia, it was above 60 per cent. At the same time, however, ten LDCs – Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kiribati, Myanmar, Solomon Islands, Somalia and Timor-Leste – still had a mobile penetration of less than ten per cent at the end of 2008.

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[1] COE, ECA, ECE, ECLAC, ESCAP, ESCWA, FAO, GAID, IGF, ITU, OECD, SBC, UNCTAD, UNDESA, UNESCO, UNIDO, UPU, World Bank, WHO.

[2] The complete submissions from each organization can be accessed on the CSTD website: www.unctad.org/cstd.

[3] ITU, 2010, Measuring the Information Society 2010 (Geneva: ITU).

[4] UNCTAD, 2009, The Information Economy Report 2009 (Geneva: UNCTAD) and ITU, 2010, Measuring the Information Society 2010 (Geneva: ITU).

6. In other areas, such as fixed telephony, Internet access and broadband connectivity, the LDCs still lag far behind other developing countries. During the past decade, despite a marginal reduction in the gap between the average penetration in LDCs and the world average, at the end of 2008, there was less than one fixed line per 100 inhabitants. Although internet connectivity has improved, in 2000, only one per thousand LDC inhabitants was an Internet user. By 2008 that number had increased to 24 users per thousand inhabitants. Nonetheless, despite the increase, Internet connectivity was about 10 times higher in the world as a whole. However, the largest divide is found in the area of broadband connectivity. The group of LDCs has improved the average penetration but from a negligible level in the early 2000s. In 2008, the world average penetration level was more than 200 times higher than in the LDCs.[5]

B. Financing the ICT sector during an economic downturn

7. There are concerns that the current financial and economic crisis will impact negatively on the positive trends in ICT diffusion and the investment needed in order to ensure universal access to ICTs.[6] Although the extent of the current decrease in donor funds can be difficult to gauge, policy makers should nonetheless consider employing countercyclical measures so as to stimulate ICT infrastructure development.

8. Telecommunications infrastructure investment accounts for a large portion of capital expenditures in many countries and is likely to be adversely affected during economic downturns. It is reasonable to believe that decreased access to private capital will be most deeply felt by developing countries. In addition, as many of the donor funds for the ICT sector have been diverted to pay for domestic stimulus packages, it is plausible that many donor funded projects will suffer from underfunding and eventual termination.

9. Financing for the ICT sector can be secured by either injecting public capital that is no longer available from the private sector or providing economic incentives to attract private capital. In particular, countercyclical fiscal stimulus packages that target the building of broadband infrastructure can potentially foster long term economic growth and development.

C. Towards a global culture of cybersecurity

10. Cyberattacks on the Internet pose a growing threat to the efficient ICT systems that modern society depends on. At its 64th session, the General Assembly adopted a resolution on cybersecurity by which it recognised a need for national efforts to be supported by national, regional and international information-sharing and collaboration, so as to confront effectively the increasingly transnational nature of cyber threats. The resolution is attestation to the world's commitment to creating a global culture of cybersecurity. Most crucially, the resolution affirmed that Governments are responsible for ensuring security of critical information infrastructures cybersecurity and for leading nationally, in coordination with relevant stakeholders. It furthermore called for a risk-based approach, whereby all stakeholders are made aware of relevant risks, preventive measures and effective responses in a manner appropriate to their respective roles.

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[5] UNCTAD, 2009, the Information Economy Report 2009 (Geneva: UNCTAD).

[6] See e.g. ITU (2009), Confronting the Crisis: ICT Stimulus Plans for Economic Growth (Geneva: ITU) and UNCTAD (2009): Information Economy Report 2009: Trends and Outlook in Turbulent Times (New York and Geneva: United Nations).

11. The resolution pointed to the fact that national efforts to protect critical information infrastructures benefit from a periodic assessment of their progress. In order to sustain momentum and bring further attention to the cybersecurity agenda, Member States were invited to provide summaries of their key initiatives on cybersecurity and the protection of critical information infrastructures, so as to highlight "national achievements and best practices, lessons learned and areas for further action". A voluntary survey in the form a national cybersecurity self-assessment was seen to aid countries in reviewing national efforts on cybersecurity and the protection of critical information infrastructures.

12. As cyberattacks proliferate, new skilled personnel are needed to combat them. National cybersecurity strategies must recognise the need of raising awareness and building capacity through the establishment of relevant education and training programmes in schools and at universities. A global culture of cybersecurity requires an education system that is conducive to generating talents that both understand the challenges and difficulties facing the global internet architecture and are knowledgeable in dealing with locally specific conditions. Academic degrees in what is a technically demanding field-cybersecurity- is deemed highly necessary and should be offered across universities and training centres worldwide.

D. An open-source approach to content

13. The issue of online content deserves further attention in the wake of increased bottom-up approaches to content creation and management, lauded for generating content that is user-friendly, user-specific and user-relevant.

14. Initiative-taking in Open Source Software (OSS) is increasing globally. As the technology that enables OSS platforms becomes more widely available, many open source projects have begun to appear. OSS creates more opportunities to addressing ICT needs such as allowing collaboration between software companies and local communities, and encouraging models that combine both proprietary and OSS components. OSS can be adapted to suit local needs, contributes to ownership and independence and develops local capacity. However, continuing education and awareness building are required in order to familiarise decision makers of the viability of OSS products. The issue of sustainability and interoperability are two key areas of difficulties faced by OSS solutions. While initial OSS interest is brought about by the potential for lower cost, a longer-term benefit may be increased choice to consumers of ICTs. This is an area in which Governments may play a key role. Governments may consider improving access to the market for all software providers and assisting OSS initiatives in accessing market opportunities.

E. ICTs and the environment

15. Improving environmental performance is a valuable application of ICTs. For example, innovation in ICTs has led to the development of smart environmental applications in power generation and distribution, buildings and transportation. Intelligent Transport Systems (ITS) and electricity smart grids are two ICT-based technologies with great potential for reducing carbon emissions. ITS make use of ICTs to transport infrastructure and vehicles to reduce transportation times, transport-generated pollution and fuel consumption. Smart grids manage and control the delivery of electricity using ICT technologies to obtain and pass on local information. Innovative ICT applications offer further environmental benefits in the areas such as water management, biodiversity protection and pollution reduction.

16. As well as offering opportunities for enhancing environmental performance, ICTs themselves must be improved to achieve greater efficiency. The services industry in particular consumes large quantities of energy in order to power its ICTs. Efficiency measures could significantly reduce this consumption and the industry's environmental impact. In order to identify opportunities for improving efficiency, measuring the impact that ICT-based industries have on the environment is crucial. ICT innovation is a key element to spur sustainable economic development.[7]

II. Implementation and follow-up at the regional and international level

A. Implementation and follow-up at the regional level

17. United Nations regional commissions continue to support WSIS implementation through regional action plans.[8] A broad range of activities have been reported at the regional level, including facilitation of the sharing of best practice experiences, support to national Governments in policy development, e-services deployment, and various capacity-building efforts.

1. Africa

18. Within the framework of the African Information Society Initiative (AISI), the United Nations Economic Commission for Africa (ECA) is increasingly sought by member States to assist them, at the national, sub-regional and regional level, to develop and fine tune their ICT policies, and to promote ICT applications in the areas of governance, education, health, agriculture, finance and trade.

19. At the regional level, connectivity in Africa has seen positive developments. For instance, three undersea fiber optic cables were launched in 2009 and a few more are scheduled for completion by 2011. The 17,000-kilometre South Africa-East Africa-Fiber Optic Cable (SEACOM) was launched in July 2009, with launching stations in Djibouti, Egypt, Kenya, Mozambique, South Africa and Tanzania. The landlocked countries of Rwanda and Uganda are connected to SEACOM through national backbones. The EAST Africa Marine System (TEAMS) fiber optic cable was also launched in 2009 linking Kenya to the United Arab Emirates.[9] The 10,000-kilometer Eastern Africa Submarine System (EASSy) cable projects, running from South Africa to Sudan along the East Coast of Africa is scheduled for operation in mid-2010. It will landing eight countries, namely, Comoros, Kenya, Madagascar, Mozambique, Somalia, South Africa, Sudan and Tanzania. There are also a number of fiber optic submarine cable initiatives in North Africa as well as in the West coast of Africa that have been launched in 2009 connecting Africa to Europe. It is expected that these new fiber optic cables will reduce the cost of Internet communication in the continent.

20. ECA continued to foster entrepreneurship, innovation and investment in e-commerce in 2009. ECA supported the launch of the African Alliance on e-Commerce by ports authorities, customs in collaboration with clearing and forwarding agents from the

[7] ITU (2008), ICTs and e-Environment (Geneva, ITU) and ITU (2009), ITU Background Paper on ICTs and Climate Change (Geneva, ITU)

[8] See Report of the Secretary-General on promoting the building of a people-centred, development-oriented and *inclusive information society* (E/CN.16/2007/2) for details.

[9] http://www.itnewsafrica.com/.

African public, private sector and NGO communities. Moreover, ECA has undertaken and published a study on m-banking, covering Kenya, Senegal and South Africa.

21. E-government is an area of concern for ECA. The UN E-Government Survey[10] shows that Africa lies significantly below the world average. To tackle this situation, ECA has provided assistance and support to its member States in developing national e-government strategies. In this connection, ECA initiated the Technology in Government in Africa awards (TIGA) in collaboration with Canada and Finland governments. In 2009 12 innovative projects from 10 African countries received the awards in recognition of achievements that led to changes in the use of ICTs for public service delivery.

22. ECA has encouraged member countries to develop content that uses local languages and OSS. An ECA-led survey has shown that only 35 percent of the respondents, including WSIS focal points in member States and regional economic communities have initiatives that support creating software in local languages. However, 39 percent of the respondents asserted that their governments promote through private public partnerships, research in hardware and software development, including proprietary, open-source and free software, standard characters sets, languages codes, electronic dictionaries, terminology and thesauruses, multilingual search engines, machine translations tools, internationalized domain names, content referencing as well as general and application software.

23. Regional cooperation efforts in Africa strengthened in several aspects in 2009. In October 2009, the Economic Community of West African States (ECOWAS) ICT ministers adopted a set of e-legislations that were developed by ECA, pertaining to electronic transactions, cyber crime and personal data protection. Moreover, the Common Market for Eastern and Southern Africa (COMESA) implemented ICT strategy guidelines, endorsed by ECA, concerning ICT indicators, e-government, e-legislation and e-security. Furthermore, the Olivier Tambo Declaration was adopted in November 2009 which request ECA to develop, under the framework of AISI, a convention on cyber legislation for adoption by its member States by 2012. The European Commission endorsed funding proposal of USD10 million for supporting the African Regional Action Plan on the Knowledge Economy (ARAPKE), which was developed by ECA for the African Union.

24. The Tunisian Government, in close collaboration with UNCTAD and ITU, and in partnership with the Global Alliance for ICT and Development (GAID) and the African Development Bank organized the fourth ICT4All Forum – Tunis+4 in Hammamet, Tunisia, in November 2009, under the patronage of the President of Tunisia, Mr. Zine El Abidine Ben Ali. The Forum addressed the theme of ICT innovation as a tool for enhancing competitiveness and growth. It provided an opportunity to share national experiences in the use of ICT for the development and promotion of entrepreneurship and competitiveness. The forum was attended by close to 1,800 participants, representing 52 countries.

25. The Forum focussed on national strategies for the applications of ICT, particularly in business and other economic activities, and addressed a spectrum of issues concerning ICT innovation, business and investment promotion. In particular, it was argued that the African continent should have opportunities that would enable it to connect, and to use the existing infrastructure and services to create its own solutions. Participants also highlighted success stories achieved by mobile telephony in Africa, highlighting innovative business models which led to their success. Furthermore, many of the participating international and regional organisations presented their ICT for development projects and ICT solutions. The

[10] The UN e-Government Survey is an index published by UNDESA and is available at http://www.unpan.org/e-government; http://www2.unpan.org/egovkb/. It is a comparative ranking of the countries of the world on according to indicators including the state of e-government readiness and the extent of e-participation.

forum also provided an opportunity to exchange good practices and experiences in ICT innovation, investment opportunities, partnerships and potential markets for business models.

2. Asia and the Pacific

26. Despite tremendous growth in the ICT sector, the level and speed of ICT uptake varies considerably among and within the economies of the Asia and Pacific region. In fact, remote and poor areas remain underserved and a digital divide is growing in terms of Internet access and availability of broadband networks.

27. ESCAP members have made conscientious efforts in disseminating public information through the use of ICT for public service delivery. The Light Houses Task Force, which promotes Open City Portal and CityNet, has been promoting the use of ICT in the work of cities and municipal bodies. There have been further efforts to bring ICT access to remote and underserviced areas, including through the Asia and Pacific Telecenter Network and the Euro-Asia Telecentre Network. In collaboration with Asian Development Bank (ADB) and the United Nations Development Account, ESCAP has also supported the expansion of ICT access in remote and rural areas through community e-centre initiatives.

28. In terms of capacity-building, ESCAP has reached new targets through the Asian and Pacific Training Center for Information and Communication Technology for Development (APCICT), established by ESCAP countries in 2006, and its flagship programme "Academy of ICT Essentials for Government Leaders" (Academy). The Academy has so far developed eight modules on ICT for development available in three languages (English, Bahasa Indonesia and Russian). Two more modules on ICT for Disaster Risk Reduction and Climate Change and ICT are being developed. The programme has been adopted and replicated in a number of countries for ICT capacity building of policymakers and officials, and 760 participants have received training through 22 Academy workshops and other events. The APCICT Virtual Academy (AVA – http://ava.unapcict.org) works as the online distance learning platform of the Academy.

29. The First Session of the Committee on Information and Communications Technology (CICT) held in March 2009 advocated the strengthening of regional cooperation for application of ICT to reach the Millennium Development Goals and other major summits to meet economic, social and technological challenges, such as enhancing Pacific Connectivity and disaster risk reduction. The Expert Group Meeting on Regional Cooperation towards Building an Information Society in Asia and the Pacific, held in July 2009, recommended a series of actions towards reaching the major goals and targets of the WSIS in Asia and the Pacific after reviewing the progress made in the implementation of the WSIS outcomes.

30. In order to address region's priorities, such as economic crisis and climate change, ESCAP has been undertaking unique research and analysis, such as promoting green ICT, examining the example of the Republic of Korea in the 1997 financial crisis, review of various ICT initiatives for disaster management. The Regional Inter-agency Working Group on ICT, a joint collaboration of ESCAP, ITU and the Asia-Pacific Telecommunity in its last meeting in November 2009, agreed to build regional disaster risk management communication capacity. The First Session of the Committee on Disaster Risk Reduction (CDRR) held in March 2009 advocated the development of the Asia Pacific Gateway for access to and sharing of information and analysis related to disaster risk reduction and development.

31. ESCAP plans to undertake research and analysis towards enhancing ICT connectivity, in particular broadband access, in underserviced regions. To this end, private-public partnership will be pursued, recognizing that the private sector is a major driver for

the adoption and dissemination of ICT technologies. In order to focus on the priorities of the region in the aftermath of the economic crisis, ESCAP will advocate for better regional integration through enhanced ICT connectivity in such areas as trade and transport facilitation and Pacific Connectivity of small isolated island states for economic development. These efforts will also be supported by ESCAP's contributions to the global initiatives, such as the UNDESA's project on promoting ICT for achieving MDGs which covers not only policy and decision makers but also civil society, private sector and academia.

3. Western Asia

32. Taking into consideration the impact of the financial crisis, the Economic and Social Commission for Western Asia (ESCWA) has adopted measures to advance its vision of a knowledge-based economy for development (KBE4D).

33. To propel the WSIS momentum forward and to foster the implementation of the Regional Plan of Action (RPoA), ESCWA organized in June 2009, in Damascus, Syria, a conference entitled "Regional Follow-up to the Outcome of the WSIS"[11]. Attended by more than 275 participants, the main objectives of the conference were to review and follow-up on the implementation of the WSIS outcomes, the RPoA for Building the Information Society in Western Asia and the Arab ICT strategy and to update them in view of accumulated experience. The conference led to an update of the RPoA and concluded with the adoption of the "Damascus Proclamation for the Promotion of the Arab Knowledge Society for Sustainable Economic and Social Development"[12].

34. ESCWA continued to maintain and update its Information Society Portal (ISPER)[13] which contains information and updates for following-up on the RPoA as well as all the issues around the WSIS. The portal is connected to the ESCWA Statistical Information System (ESIS), allows users to query the database, to access Regional and National Profiles of the Information Society, and also provides real-time discussion forums to WSIS stakeholders.

35. In 2009, ESCWA continued the implementation of the project entitled "Knowledge Networks through ICT Access Points for Disadvantaged Communities" (KN4DC) noting that access to information and knowledge in disadvantaged areas is a major impediment to achieving the WSIS targets. During the first half of 2009, telecentres provided on the knowledge networks' regional portal, information and knowledge pertinent for their communities[14]. In July 2009, in Amman, Jordan, ESCWA co-organized with telecentre.org the "Telecentres' Leaders Forum". This forum aimed to: (a) convene network leaders to build functional relationships and to lay the foundation of knowledge networks; (b) present best practices, success stories and case studies; (c) build the capacity of the participants to use online tools to foster a nascent regional knowledge network; and (d) expand the ESCWA regional network by engaging new partners and practitioners. In January 2010, ESCWA co-organized with the Gedaref Digital City Organization to follow-up on the "Workshop on the Management and Sustainability of Knowledge Hubs"[15]. The forum's objectives include: (a) Bringing together telecentre managers in order to consolidate relationships that lead to strengthening of knowledge networks; (b) Familiarizing telecentre managers with concepts and methods that are relevant to the goals of the project; and (c)

[11] http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=850E

[12] http://css.escwa.org.lb/ICTD/850/DamascusProclamationAr.pdf

[13] http://isper.escwa.org.lb

[14] http://www.knowledgenets.net

[15] http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1217E

Training telecentre managers on the establishment and management of small business ventures. Further workshops are planned in 2010 to address themes related to sustaining the knowledge network beyond the lifetime of the project.

36. ESCWA has launched a new initiative entitled "Regional Harmonization of Cyber Legislation to Promote the Knowledge Society in the Arab World" so as to bridge existing legislative gaps in the region's cyberlegislation. The initiative allows ESCWA members to meet targets set by the Tunis Agenda, foster cross-border transactions and respond to the requirements of the Information Society.

37. A Request for Comments (RFC) of the informational type entitled "Linguistic Guidelines for the Use of the Arabic Language in Internet Domains" was published in 2009. ESCWA prepared also documents for the establishment of a pan-Arab registry to manage and operate a new ".Arab" generic Top Level Domain (gTLD) and its IDN equivalent in Arabic characters.

38. In 2009, ESCWA published "Internet Governance: Challenges and Opportunities for the ESCWA Member Countries" in an endeavour to increase the knowledge and understanding of Internet governance issues while promoting the role of Arab countries in the global Internet society[16].

4. Latin America and the Caribbean

39. The Economic Commission for Latin America and Caribbean (ECLAC) continued to implement the Regional Action Plan eLAC2010, according to the agreement reached in San Salvador during the Ministerial Meeting in 2008. This Action Plan eLAC2010 is a milestone towards achieving the Millennium Development Goals by 2015 and the goals set by the WSIS.

40. Despite the financial crisis, the progress has built on the progress that has been achieved in previous years. In December 2009, the "eLAC2010 Progress meeting: establishing priorities for the Information Society of the Future" produced a document entitled "eLAC2010: Monitoring Latin American and Caribbean information societies".[17] This document notes that countries in the region are making firm progress in access, use and incorporation of ICTs for development and social inclusion, including in education, e-government, and in small and medium enterprises (SMEs). However, the report notes that the progress has been uneven across the region and that the digital divide still persists across and within countries. Comparing the digital access between OECD countries and ECLAC members the report found that the digital divide is narrowing concerning fixed and mobile telephony and internet, but widening concerning broadband access, with costs of broadband access being an issue as well.

41. In order to disseminate knowledge, more than seven publications were published by ECLAC and added to ECLAC's InfoSoc series available online[18] The studies tackle specific issues and answer concrete questions asked by policy makers from the region, and include "ICT policy for schools in Latin America and in the world: vision and lessons"; "The transformation of access points in knowledge nodes: analysis of ten experiences of community telecentres in Latin America"; and "Challenges and opportunities of the software industry in Latin America". In February 2009, the book "The Information Society in Latin America and the Caribbean: Development of Technology and Technologies for Development" was released The book is a repository of diverse and complementary issues

[16] http://www.escwa.un.org/information/publications/edit/upload/ictd-09-7-e.pdf
[17] http://www.cepal.org/socinfo/noticias/documentosdetrabajo/6/38106/monitoreo.pdf
[18] http://www.cepal.org/socinfo/publicaciones

of regional Information Society development. The UN-ECLAC Observatory for the Information Society in Latin America and the Caribbean (OSILAC) with the financial support of the Canada's International Development Research Center (IDRC) launched in April 2009 a new Online Statistical Information System on ICT.[19] This online database allows the general public to access data and indicators obtained through household survey on ICT of 17 countries of the region; the data have been harmonized so as to facilitate comparison.

42. In 2009, OSILAC, the Brazilian Institute of Geography and Statistics (IBGE), SOFTEX and the Brazilian Internet Steering Committee organized the Fifth Workshop on Information Society Measurement in Latin America and Caribbean. The meeting gathered representatives from 16 different countries of the region, including national statistical offices, national institutions in charge of elaborating, coordinating and fostering the development of statistics on ICT, international agencies and other participants from universities, NGOs and the private sector. The meeting discussed the progresses and the challenges faced by gathering and analysing ICT indicators with respect to households, business, e-government, e-health and e-education. A revised Compendium of Practices on the implementation of ICT questions was presented at the Fifth meeting of the Statistical Conference of the Americas, in Bogota in August 2009. The enclosed analytical document recommended methods for developing indicators for the eLAC goals, including those related to e-government and e-education.

43. ECLAC advocates the provision of broadband access as a public good. In a joint initiative with Telecentre.org, the Telecentre Leaders Forum in Latin America and Caribbean was organized in Brasilia in May 2009. During the Santiago meeting "Rural and urban digital inclusion: ICT access points as strategic spaces for the implementation of public policies for development and innovation" held in October 2009, several initiatives were launched in connection with access of infrastructure.

5. Europe and the ECE region

44. The United Nations Economic Commission for Europe (UNECE) continued its work on the Aarhus Convention with the Aarhus Clearinghouse for Environmental Democracy which contains information on laws and practices to enable the participation of the public (through right to access information) in environmental matters. The clearinghouse has reached more than 1800 entries in 2009 and an agreement with the OECD allows UNECE to manage the Pollutant Release and Transfer Register (PRTR). In partnership with Google.org and OECD, UNECE developed a global online map of PRTR facilities which was demonstrated at UNFCCC COP-15 on December 15 2009. Moreover, UNECE encouraged the development of the network of Public Environmental Information Aarhus Centres in emerging Europe, the Caucasus and Central Asia.

45. In 2009, United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) with the UNECE Committee on Trade has further worked on improving and advancing the next generation of e-business standards and tools. Notable advancements and agreements have been reached on several important instruments, among others: the Single Window, the Cross Country Invoice and the XML (Extensible Markup Language) schema directory covering trade and business processes.

46. The ECE countries are intensively developing and implementing Intelligent Transport System (ITS) in various transport fields. However these new systems are currently under-regulated and need to be harmonized on the basis of a widely adopted

[19] http://www.cepal.org/tic/flash/

consensus about their potential for increasing safety, reliability and quality of transport services.

47. The UNECE continues to use extensively ICT to promote its sustainable energy programme. In fact, the United Nations Framework Classification of Fossil Energy and Mineral Resources (UNFC 2009) has been approved and disseminated after online expert review and comments by the Ad Hoc Group of Experts on Harmonization of Fossil Energy and Mineral Resources Terminology.

B. Implementation and follow-up at the international level

1. General Assembly

48. On December 21 2009, the General Assembly adopted, by consensus resolutions A/RES/64/212 on Science and technology for development and A/RES/64/187 on information and communication technologies for development. In resolution A/RES/64/212, the Assembly requests the Commission on Science and Technology for Development to provide a forum within which to continue to assist the Economic and Social Council in the system-wide follow-up to the outcomes of the World Summit on the Information society, and, furthermore, address the special needs of developing countries in areas such as agriculture, rural development, information and communication technologies and environmental management.

49. In resolution A/RES/64/187, the GA reiterated ECOSOC's request to the CSTD, to organise, during its thirteenth session, a substantive discussion on the progress made over five years in the implementation of the Summit outcomes, including consideration of the modalities of implementation and follow-up to the Summit, and invites all facilitators and stakeholders to take this into account with regard to their contribution to that session. Furthermore the resolution also requests the Secretary-General to submit to the General Assembly at its sixty-fifth session, through the Economic and Social Council, a report on the status of the implementation of and follow-up to the same resolution.

2. Economic and Social Council

50. ECOSOC adopted on July 24 2009 resolution 2009/7 on assessment of the progress made in the implementation of and follow-up to the outcomes of the WSIS. The resolution recognises that ICTs have the potential to provide new solutions to development challenges, particularly in the context of globalization, and can foster economic growth, competitiveness, access to information and knowledge, poverty eradication and social inclusion that will help to expedite the integration of all countries, particularly developing countries, into the global economy. The resolution requests the Commission, during its thirteenth session, which will be held at the halfway point to the 2015 overall review, to organize a substantive discussion on the progress made over five years in the implementation of the Summit outcomes, including consideration of the modalities of implementation and follow-up to the Summit, and invites all facilitators and stakeholders to take this into account with regard to their contribution to that session. Furthermore, the resolution requests the Secretary-General to submit to the General Assembly at its sixty-fifth session, through the Economic and Social Council, a report on the status of the implementation of and follow-up to the same resolution.

3. United Nations Group on the Information Society (UNGIS)

51. In May 2009 ITU took over from UNESCO the Chairmanship of the United Nations group on the Information Society (UNGIS) and hosted two physical UNGIS meetings in

May and October. At this occasion, UNESCO, UNCTAD, UNDP, and UNECA were elected as vice-chairs.

52. The ITU, UNESCO and UNCTAD co-organized and ITU hosted the Open Consultations on Financial Mechanisms for Meeting the Challenges of ICT for Development held in October 2009 following ECOSOC resolution 2008/3. The discussion and the conclusions of these Open Consultations, which were jointly organized by UNGIS Chair and Vice-Chairs, were underlined by several meetings addressing the issue of Financial Mechanisms, including the CSTD intersessional panel, held in Geneva from 9-11 November 2009, as well as a briefing meeting during the ICT4All+4 Forum, November 2009 in Hammamet, Tunisia.

4. Facilitation of coordination of multi-stakeholder implementation of the Geneva Plan of Action

53. Pursuant to the mandate of ITU, UNESCO and UNDP as leading facilitators of the multi-stakeholders implementation of the Geneva Plan of Action, in 2009, ITU hosted the WSIS Forum 2009[20], from 18 to 22 May, which was jointly organized by ITU, UNESCO, UNCTAD and UNDP. The Forum had adopted a new format, as a result of open consultations with all WSIS stakeholders, namely, a 5 day forum comprising high-level panels, WSIS Action Lines meetings, thematic workshops, and opportunities for networking and forging partnership.

54. The annual meeting of action line facilitators was held on 22 May 2009 as an integral part of the WSIS Forum, with three main goals: exchange of information among facilitators and other stakeholders; identification of issues that needed improvement; and discussion of the modalities of reporting the overall implementation process.

55. Pursuant to paragraph 120 of the Tunis Agenda on the Information Society, which encourages stakeholders to share information related to the implementation of the WSIS outcomes, the ITU continued to maintain the WSIS Stocktaking Database, which by the end of 2009 contained more than 4000 entries from about 1500 stakeholders and from more than 140 countries. The Database is being updated to assist the mid-term review of the WSIS process, and update stakeholders on activities undertaken by governments and other organizations for achieving the WSIS objectives and targets.

5. Civil society, business and multi-stakeholder partnerships

56. In November 2009, the Association for Progressive Communications (APC) and the Humanist Institute for Cooperation with Developing Countries (Hivos) launched the new Global Information Society Watch 2009.[21] The report covers the state of the information society from the perspectives of civil society organisations across the world. In 2009, the report focused on "access to online information and knowledge – advancing human rights and democracy". The report stresses that freedom of expression and the free flow of information and knowledge are essential to democratic societies. Therefore the report contains an innovative section on visual mapping of global rights and political crises.

57. In 2009, Business Action to Support the Information Society (BASIS), an initiative of the International Chamber of Commerce (ICC), contributed reports from member companies to the WSIS follow-up, which highlighted concrete initiatives and activities launched by business around the world that are implementing many of the WSIS action lines and outcomes. BASIS strongly advocated for the continuation of the IGF, stating that

[20] http://www.itu.int/wsis/implementation/2009/forum/geneva/

[21] http://www.giswatch.org/gisw2009/GISW2009.html

the IGF's multi-stakeholder setting and founding principles allow for unique open discussion with a wide range of participants and stakeholders. Business is the primary provider of the equipment, services and applications that are the Information Society infrastructure adding about 500 million new mobile subscribers in 2009 (total of 4.6 billion), and 200 million new Internet subscribers in 2009 (total of 1.6 billion). Along with civil society and governments, business also provides the content that enriches and improves people lives and contributes to economic, social and human development. Many companies and business associations are involved in daily activities, partnerships and initiatives that maximize ICTs to address issues that impact peoples' lives, including education, health and reducing emissions. Business is a major investor in the infrastructure that brings the benefits of ICTs to more people. Companies of varying sizes have produced new innovations this year in applications, services and products that benefit users of ICTs and the Internet and reduce costs.

58. At the 12th session of the CSTD, the Global Alliance for ICT and Development (GAID) the CSTD Secretariat, ITU and the World Health Organization (WHO) organized a Panel Discussion on the theme: "Mobile Technology, Convergence and Social Networking Tools for Development and Poverty Alleviation" and also a second Panel on "Delivering Innovation in Global Public Health". In September 2009, in Monterrey, the Annual Meetings and Global Forum of the Global Alliance for ICT and Development established a new partnership under GAID umbrella on ICT and education. This global partnership named "Education for All in the Digital Age" includes some major UN Agencies like UNESCO and ECLAC, as well as private sector companies like Nokia-Siemens Networks, Intel, Cisco, etc. and will work collaboratively to define the principles and supports the achievement of the MDGs through ICT applications. During the substantive session of ECOSOC in July 2009, GAID organized a ministerial breakfast roundtable and a special event on Africa and the least developed countries (LDCs): Partnerships and Health - Digital Health and Development in Africa.

6. Facilitation of Action Lines and selected implementation of activities of United Nations entities

59. A wide range of programme activities have been reported by entities in the United Nations system with respect to Action Line facilitation and WSIS implementation. In carrying out these activities, United Nations entities have worked closely with national Governments, regional commissions and other stakeholders, including NGOs and the private sector.

a. Implementation of action lines

The role of public governance authorities and all stakeholders in the promotion of ICTs for development (C1)

60. DESA's UN E-Government Survey 2010[22]: Leveraging E-government at a time of financial and economic crisis provides a comparative analysis of the e-government development of 192 Member States based on criteria such as online service index (formerly known as web measure index), telecommunication infrastructure and human capital endowment. The survey explored the relationship of e-Government with government spending such as stimulus funding, integrity and efficiency in financial monitoring, and public service delivery.

[22] See http://www.unpan.org/e-government; http://www2.unpan.org/egovkb

61. During 2009, DESA as the facilitator for Action Line C1 and through the Division for Public Administration and Development Management (DPADM) focused its attention in supporting e-government development efforts of the Member States. To this end, DPADM finalised the content of a UN Global Knowledge Repository on Electronic and Mobile Government (emGKR) by gathering cross national and local information in e/m government development, policies, strategies, solutions and knowledge transfer activities. This repository facilitates knowledge sharing, allows resource development, and disseminates best practices as well as reliable and consistent leading indicators for effective e/m government.

62. DESA and the Inter-Parliamentary Union (IPU), in cooperation through the jointly established Global Center for ICT in Parliament (the Centre) expanded the online legal repository for ICT-related legislation. The repository now contains 450 laws from 121 countries on 9 main topics: child on-line protection; cybercrime; e-accessibility; e-commerce; electronic communications; e-signature; freedom of information; open standards; and privacy.

63. In November 2009, the Centre, in collaboration with the U.S. House of Representatives, organized the Third World e-Parliament Conference, at which the role of ICTs in improving representation, transparency, accountability, openness and effectiveness in a parliamentary setting was addressed from both a policy and technical perspective. In December 2009, the Centre and the Africa i-Parliaments Action Plan organized a workshop entitled "Strengthening the Cooperation among Parliamentary Libraries in the Framework of the Africa Parliamentary Knowledge Network (APKN)"[23].

64. In 2009, the Council of Europe organized a conference on e-democracy and e-participation, the Forum for the Future of Democracy, in Madrid, Spain. It was addressed at the Forum how e-democracy and e-participation could contribute to the transparency, accountability and responsiveness of democratic institutions, facilitate democratic engagement and deliberation, and increase the accessibility and inclusiveness of the democratic process.

Information and communication infrastructure (C2)

65. In 2009, as sole facilitator for Action Line C2, ITU carried out several activities with regard to information and communication infrastructure oriented towards six areas: (1) promotion of national ICT strategies; (2) harmonization of ICT policies in different regions; (3) development of regional and large-scale national initiatives; (4) launch of global thematic ICT infrastructures initiatives; (5) development of a virtual financing platform and (6) deployment of an online tool for ICT development assessment.

66. With the aim of mobilizing additional funds and new partnerships to attain the WSIS goals including the development of ICT infrastructure, ITU continued with the Connect Summit series and organized the second Connect Summit, Connect CIS in Minsk, Belarus from 25-27 November 2009. The Summit gathered 353 participants from 18 Member States including five Heads of State and Government and one First Deputy Prime Minister. Also 40 leading ICT companies, development banks, international organizations and other stakeholders participated in the Summit. The Summit concluded with the adoption of the Connect CIS Declaration[24].

67. The ITU also organized five ITU Regional Development Forums 2009, one for each Region, and developed training materials in close collaboration with other partners for

[23] See www.apkn.org

[24] http://www.itu.int/ITU-D/connect/cis/documents/Final_Declaration_APPROVED-RCC_24nov.pdf

bridging the standardization gap and fostering the implementation of Next Generation Networks and Broadband Networks for developing countries.

68. Within the framework of its Regional Initiatives, ITU developed a number of large scale regional projects focusing on 25 regional initiatives facilitating development of the information and communication infrastructure in Africa, Arab, Asia-Pacific, Americas and Commonwealth of Independent States Regions.

69. In radiocommunications, ITU focused on specific areas including wireless internet access (terrestrial and satellite broadband), emergency radiocommunications (to support disaster prediction, detection, mitigation and relief), remote sensing systems (for providing information on environment control and climate change) and digital broadcasting (to help bridge the digital divide).

70. ITU continues to be at the forefront of providing global standards for telecommunication. One of the most important ITU standardization activities relate to Next Generation Networks (NGN), security, multimedia services over NGN, fixed-mobile convergence, service level requirements and architectural framework to provide new services based on Internet Protocol Television (IPTV). Charging and accounting principles for International Internet Connectivity (IIC) and for NGN (including related telecommunication economic and policy issues) also continue to be studied at international and regional levels.

71. The World Bank Group has been a significant multilateral financier in ICT sector in developing countries. Between 2005 and 2009, it has succeeded in bringing ICT access to rural areas in more than 3,000 remote localities in Nepal, Nicaragua, Nigeria and Uganda. Public-private partnerships have included the ongoing IFC-supported Eastern Africa Submarine System (EASSy) and World Bank's Regional Communications Infrastructure Program (RCIP) in East and Southern Africa. Similar projects are envisioned in Central and Western Africa, Western Africa, the Caribbean and the Pacific.

Access to information and knowledge (C3)

72. UNESCO's emphasis on reinforcing infostructures to support enhanced access to diverse and multilingual knowledge were boosted through elements such as the newly launched World Digital Library (April 09) and its Memory of the World Programme that provide global access to original sources of information, and through projects developing affordable tools, technology and training as the solution for digital preservation.

73. To promote access to information and knowledge the ITU set up the Joint Coordination Activity on Accessibility and Human Factors (JCA-AHF). Furthermore, during the Forum of World Telecom 2009 (October 2009), the ITU organized a panel on accessibility which included training for African policy makers and regulators on the a-Accessibility toolkit jointly developed by ITU and G3ict to facilitate training of policy makers and regulators in mainstreaming ICT accessibility issues to comply with the UN Convention on the Rights of Persons with Disabilities (PwDs).

74. Moreover, ITU fostered its collaboration and dialogue with Universities and academia by organizing a second Kaleidoscope event entitled "Innovations for Digital Inclusion" on August 31st - September 1st 2009 in Argentina.

Capacity-building (C4)

75. The discussion during the 4th facilitation meeting of Action Line C4 on Capacity-Building, which was organized by ITU and UNESCO during the WSIS forum 2009, focused on new emerging trends and challenge in capacity building, and emphasised on

"open education resources", Web 2.0 and social networking tools that would allow improved interactivity and internationally collaborative learning environments.

76. Through its Human Capacity Building (HCB) programme, the ITU carried out regional and international trainings programmes and workshops and established e-learning toolkits, networks of experts. In 2009, a series of ITU Regional Human Capacity Development Forums was held with the goal to promote excellence in human capacity development in the ICT and telecoms sectors.

77. During the 2009 WSIS Forum, the ITU launched the ITU Academy, the goal of which is to pull together the diverse education, training and information efforts of the ITU in order to develop a harmonized and streamlined approach to ICT capacity-building. The Academy platform[25] works as the unique access point for all matters related to capacity-building like ICT training opportunities whether delivered face-to-face, or through instructor or self-paced distance learning. For instance, 17 training courses were held under the Asia Pacific Centres of Excellence (ASP CoE) Network in 2009, and 14 training course within the framework of the CIS Center of Excellence (CIS CoE) during 2009. In the Americas, the Center of Excellence for the Americas Region (AMS CoE) delivered 35 online and face-to-face training activities with the participation of more than 650 participants.

Building confidence and security in the use of ICT (C5)

78. As facilitator of Action Line C5, ITU continued to carry out several activities within the framework of the ITU Global Security Agenda (CGA). The Agenda was launched in 2007 to respond to the growing challenge of international cybersecurity. The CGA benefits from the advice of a High-Level Expert Group (HLEG)[26] composed of prominent specialists in cybersecurity, representing expertise from various backgrounds in policy-making, government, academia and the private sector.

79. To facilitate discussions on work carried out in the area of cybersecurity under AL C5, the 4th AL C5 Facilitation Meeting and a High-Level Panel on Cybersecurity were held during the WSIS Forum in May 2009.[27]

80. In May 2009, ITU published a guide entitled "Understanding Cybercrime: A Guide for Developing Countries" to help developing countries establish sound legal foundation against cyberthreats. Furthermore, ITU's "Toolkit for Cybercrime Legislation", developed by a group of multidisciplinary experts, is designed to help the harmonisation of cybercrime laws.

81. At the end of September 2009, UNCTAD, through the Network of Centers of Excellence, sponsored by the Government of Italy, jointly organized with the Tunisian National Agency for Computer Security (NACS)[28] the second training session on Cybersecurity. NACS is the only certified Computer Emergency Response Team in Africa and is in charge of implementing the Tunisian national strategy on ICT security.

82. Pursuant to a request from the governments of Burkina Faso, Ghana, Kenya and Mozambique, ECA has assisted the 4 countries in the development of their national cyber security framework by reviewing the existing policy regimes, legislation and regulations, current infrastructure capacity and future requirements, as well as possible linkages with existing international agreements, and security strategies. ECA has also developed the

[25] http://academy.itu.int/

[26] http://www.itu.int/osg/csd/cybersecurity/gca/hleg/index.html

[27] http://www.itu.int/osg/csd/cybersecurity/gca/

[28] http://www.unctad.org/Templates/Page.asp?intItemID=4906&lang=1

'*African Regional Guidelines on Cybersecurity*' and the '*Guidelines for E-Signature and Certificate Authorities in Africa*' to assist African countries in the establishment of a conducive and enabling environment for the development of a knowledge economy in view of the pervasive influence of ICTs on almost every sphere of activity on the continent.

83. Through its partnership with IMPACT, an international public-private initiative with the goal of facilitating greater international cooperation, ITU has continued, to help Member States in identifying their specific cybersecurity needs, and to assist relevant national, regional and international organizations in implementing related activities. As of the end of 2009, 40 Member States are recipients of the services offered by ITU-IMPACT.

84. The Council of Europe has continued its global efforts against cybercrime in line with the Budapest Convention on Cybercrime. The Budapest Convention is now used as a guideline by more than 100 countries worldwide.

Enabling environment (C6)[29]

85. At the 4th WSIS Facilitation Meeting organized by ITU in May 2009, it was agreed that creating a platform that enables the sharing of best practices among all stakeholders could be key to a successful implementation of the Enabling Environment Action Line[30].

86. Furthermore, in 2009, ITU has continued to help its Member States and Sector Members develop a pro-competitive policy and regulatory framework for telecommunications. With the aim of creating an enabling environment, ITU has undertaken activities in information sharing, creation of tolls for effective regulation, national and regional assistance, and the creation of training materials and opportunities.

87. At the 2009 World Telecommunication Policy Forum (WTPF) in Lisbon, Portugal, convergence implications such as Internet related public policy issues, and new emerging telecommunications policy regulatory issues were examined. The WTPF adopted six positions on: Internet-related public policy matters; the implications of the advent of Next-Generation Networks (NGNs) and advanced broadband access; ICT and the Environment; collaborative strategies for creating confidence and security in the use of ICTs; Capacity building in support of the adoption of IPv6; and the International Telecommunication Regulations (ITRs).

88. The ITU also launched during the 2009 ITU World TELECOM Youth Forum the Connect a School, Connect a Community initiative[31], which was endorsed by the UN Secretary General, to assist its members in reaching the WSIS targets to of connecting all schools by 2015.

89. The World Bank's Multilateral Investment Guarantee Agency (MIGA) promotes foreign direct investment by providing political risk insurance to investors and lenders, and by helping emerging economies to attract private investment. During the past ten years, MIGA has issued 38 guarantee contracts for 21 ICT projects, among them 12 in Africa, focusing mainly on connectivity.

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[29] In May 1988, UNDP handed over the lead facilitation role on WSIS Action Line C6 to ITU. Since then, ITU has been acting as the sole facilitator for this Action Line building upon its regular work carried out within the framework of the ITU-D Programme 1: Regulatory Reform, in close collaboration with ITU-D Programme3 : E- Strategies and ICT Applications.

[30] http://www.itu.int/ITU-D/treg/wsis/c6/

[31] http://www.itu.int/ITU-D/sis/Connect_a_school/index.html

ICT applications (C7)

E-government

90. In 2009, UNDESA published the Knowledge Base of Innovative E-Government Practices Volume III[32] and the Knowledge Base of ICT Applications for Public Service Volume II[33]. UNDESA also continued to strengthen the United Nations Public Administration Network (UNPAN) Online Training Centre[34] with e-government related courses in different languages including Arabic, English, French, Russian and Ukrainian. During 2009, the courses were delivered to 2,181 participants from around the world. UNDESA also provided substantive support and technical assistance for the implementation of e-government projects in Djibouti, Ghana and Togo.

91. METER2[35], a ready-to-use interactive web-based tool aiming to assist governments to monitor and identify areas for further development within the national e-government environment was launched in May 2009 by UNDESA in partnership with the Centre for Technology in Government (CTG), Albany-State University of New York and the Microsoft Corporation.

92. In September 2009, the OECD co-organized a workshop on "ICT for Development: Improving Policy Coherence" with infoDev/ the World Bank. The workshops discussed the lessons learned for development and outstanding policy coherence issues in: (a) access, as a precondition to the use of ICTs; (b) broadband Internet access and governments' role; (c) developments in mobile payments; (d) ICT security issues, particularly organized crime and the need to focus on prevention; (e) ICTs and the environment, and (f) the relative priority of ICTs in education.

93. The ITU also contributed to the e-government application Action Line with the publication of a study entitled "Electronic Government for Developing Countries"[36] and also co-organized with UN-DESA the thematic workshop during the WSIS Forum 2009 "e-Government and Public Private Partnerships for Better Public Service Delivery and MDGs Implementation" noting that e-government initiatives in developing countries are constrained by a lack of financial resources, a low level of skills and capacity within governments, and the absence of incentive structures for rewarding performance. Drawing lessons from the above mentioned study, ITU is currently developing toolkits to assist developing countries in the implementation of e-government strategies.

E-business

94. Implementation of WSIS outcomes regarding Action Line C7 on e-business was undertaken in 2009 at national, sub-regional and regional levels by relevant agencies such as UNCTAD, United Nations Regional Commissions, International Trade Centre (ITC), Universal Postal Union (UPU) and UNIDO.

95. During the WSIS Forum 2009, an action line meeting on e-Business was organized by ITC, UNCTAD and UPU as an Interactive Panel Debate on e-Business and Poverty Alleviation. The session was well attended. The debate was truly interactive and generated many relevant ideas on how to take the discussion further.

96. UNCTAD focused on the promotion of ICT and e-Business for development through research on trends and implications of rapid changes of ICTs. Its findings were

[32] See http://unpan1.un.org/intradoc/groups/public/documents/un/unpan037362.pdf
[33] See http://unpan1.un.org/intradoc/groups/public/documents/un/unpan037478.pdf
[34] See http://www.unpan.org/onlinetraining
[35] See http://www.unpan.org/meter
[36] http://www.itu.int/ITU-D/cyb/app/docs/e-gov_for_dev_countries-report.pdf

presented in the *Information Economy Report 2009*. UNCTAD continued to assist Governments of developing countries in the areas of monitoring the information economy, preparing and reviewing national ICT policies, preparing legal frameworks supportive of the development of e-commerce, and capacity-building activities related to information economy statistics. A Study on Prospects for Harmonizing Cyberlaws in Latin America was published in June 2009. The study provides a basis for advancing plans towards a harmonized legal framework to support the development of Internet-based commerce in countries of the Asociación Latinoamericana de Integración (ALADI).

97. In 2009, the Universal Postal Union (UPU) continued its work on the implementation of the outcomes of the WSIS by organizing the E-Commerce conference held in Hong Kong. The conference gathered representatives from the private sector, governments, regulators and postal operators which discussed the importance of cross border e-commerce in the developing and the developed world.

98. Moreover the UPU Post*Net network now connects more than 150 countries for the exchange of EDI data about postal movement which indirectly contributes to the development of e-commerce in these countries by using UPU international standards and interconnection technologies. Regarding e-inclusion, the UPU continued to develop its International Financial System (IFS) network which enables secure and electronic international remittance service by adding two more countries, Lithuania and Vietnam.

99. The joint project that involved ITU, UPU and South Africa in selected developing countries took off in 2009 and received participation from Tanzania, Mozambique, Malawi, Zambia and Rwanda. As part of this project, Tanzania Post will launch a programme for issuing franchises to SMEs in order to enable them have access to ICT and postal services. In Mozambique, the government is committed to establishing, operating and maintaining Internet services providers (ISPs) in post offices of rural areas with the help of the World Bank. These post offices will enable educational institutions, government offices, hospitals, enterprises and entrepreneur-led telecentres to have access to Internet.

100. For the future, the UPU is committed to improve the postal sector's capabilities in underserved and remote communities that wish to access domestic and international e-commerce marketplaces and e-trade gateways. Furthermore the UPU undertaking a study involving 650,000 offices in the global postal network in order to review best practices in the use of ICTs in promoting domestic and international e-commerce for South-South and South-North transactions.

E-health

101. The World Health Organization (WHO) through its Global Observatory monitors country's progress on the resolution WHA58.28[37] and the WSIS implementation, both calling for long term strategies for the implementation of eHealth services. In 2009 and since the first global survey on eHealth, there has been continued progress in building policies and public-private partnership supporting eHealth. Progress has been noted in capacity-building, rates of adoption of eHealth applications and knowledge services for health professional and students. In 2010, the WHO will publish a detailed country specific report on the implementation of WSIS eHealth action line covering subjects like policy, partnerships, infrastructure, funding, capacity-building, legal issues and the adoption of established and emerging applications, such as mobile health.[38]

[37] http://apps.who.int/gb/ebwha/pdf_files/WHA58/WHA58_28-en.pdf
[38] www.who.int/GOe/en

102. The WHO is committed to improving access to health information, in partnership with the private sector. The Health InterNetwork Access to Research Initiative (HINARI) with the cooperation of more than 150 publishers provides free or low-cost online access to health science journals to local, not-for-profit institutions in developing countries[39]. Moreover, the Global Health Library brings together national and regional initiatives like the Latin American and Caribbean Virtual Health Library. This network connects local, national, regional and international flows of information on health through a network of virtual libraries.[40]

103. The use of ICT in systems for emergence response was highlighted with the H1N1 global pandemic in 2009. ICT was used for timely local reporting of confirmed case of influenza, the rapid and secure sharing of information at the global level, the use of web-based and mobile technologies alongside traditional media for the public information exchange. This pandemic showed the importance to connect all countries' research, academic, laboratory and clinical institutions, professionals, communities and citizens to tackle health problems.

104. Progress has been achieved in the area of standardizing health information systems, most notably the electronic version of the International Classification of Diseases (ICD), the development of a web-based revision process for ICD-11, an agreement on terminologies (CNOMED-CT (IHTSDO)), and initiation of development of a classification for patient safety and for traditional medicine.

105. The WHO is concerned with the interoperability of standards that remains a serious challenge for the health sector as conflicting standards, versions and implementations exist. A wide adoption of interoperability standards would bring real benefits and value of information exchange across organizational boundaries. The challenge of achieving widespread health information systems including the design, governance and ability to manage complex ICT deployments remains.

106. ITU, in addition to providing direct assistance to Member States, has also been developing scoping studies and implementation toolkits, including study on "Implementing e-Health in Developing Countries – Guidance and Principles".

E-learning

107. UNESCO believes that e-learning is a cornerstone to building inclusive knowledge societies. To this end, UNESCO has fostered its partnerships in the areas of ICTs in Education policy, content and curriculum development, and in the use of ICTs for higher-, teacher- and literacy education and for technical and vocational training in 2009.

108. Furthermore, UNESCO has launched a series of new initiatives while extending others, namely the development of an Open Education Management Information System (OpenEMIS), Free Open Source Educational Resources (OER) for teacher education in post-conflict and post-disaster situations, Open and Distance Learning (ODL) was developed and used for the training of 3700 teachers in Africa. In Asia, a peer coaching programme was launched to improve the institutional capacity of teacher education institutions (TEIs) to use ICTs in teaching and learning.

109. During the WSIS Forum in Geneva, in May 2009, UNESCO dedicated a session to m-learning, taking note that there are over 4 billion of mobile phone subscriptions in the world. In December 2009, UNESCO also held an expert meeting on the use of mobiles for

[39] www.who.int/hinari/en

[40] www.globalhealthlibrary.net

development and for e-learning, resulting in a brainstorming session about future action to be undertaken by all stakeholders.

E-employment

110. In May 2008, UNIDO and Hewlett-Packard (HP) launched the HP's Graduate Entrepreneurship Training through IT (GET-IT) programme in Africa and the Middle East. The goal of the programme is to teach young un- or underemployed people aged 16 to 25 the basics of entrepreneurship with practical training in the use of ICT and computer technology. This training helps them to establish their own business or to increase their employability. Since its launch, the programme has set up 33 GET-IT centres in 10 countries, certified 143 GET-IT trainers and trained more than 15,000 students in Africa and the Middle East and continued its expansion in 2009.

111. In 2007, UNIDO jointly with Microsoft and the Government of Uganda launched a local software initiative to provide opportunities to ICT graduates to be employed in the information economies, as well as to create innovative software solutions in local languages tailored to the native needs. To this end, in 2010, and to build on previous accomplishments, it is planned to open the first local software development centre in East Africa to act as a centre of excellence and incubator involving academia, industrial associations, the private sector and relevant public institutions.

112. The World Bank's newly launched ICT Skills Initiative contributes to ICT skills development in developing countries. The program fosters skills development within and outside the formal educational system with the help of training and job placements. The 2009-2010 pilot project carried out in Nigeria is expected to be scaled up in other countries.

E-environment

113. The Secretariat of the Basel Convention (SBC) is concerned with the control of transboundary movements of hazardous wastes and their disposal since 1992. SBC notes that electronic waste is growing rapidly and at uncontrollable rate worldwide. For example, in countries where electronic are not prevalent yet, the PC-waste generation would quadruplicate or increase of eight-fold by 2020. Concerned with this issue, SBC, UNEP and UNIDO are implementing projects involving technical assistance to explore environmentally sound e-waste management in developing countries.

114. SBC notes that the technology to dismantle e-waste in an environmentally friendly fashion exists but it is not linked to the product life-cycle but is not yet commercially viable. Concerted efforts from producers, consumers, recycling and disposal companies in addition to a sustainable financing system are needed. The problem has become more acute in the last five years, since the lifespan of computer equipment has decreased from 4-6 years to 2-4 years in 2005. Most developing countries lack legislative and enforcement schemes for recycling and disposal of e-waste, and dismantling and recycling of raw material is nearly exclusively in the informal sector, leading to improper handling of e-waste and heavy pollution (open burning of plastics, copper wires and by leaching strong acid to recover precious metals). However, the dismantling of computer cases, frames, wires and cables brings valuable metals. Due to the increase in prices of these metals, recycling has become economically attractive for the informal sector.

115. SBC recommends bridging the digital divide using a life-cycle analysis and relevant laws to avoid health and pollution problems domestically and across borders. Once included life-cycle approach would allow ICT to bring sustainable benefit to the development of countries by generating income at each step of the cycle.

116. The World Meteorological Organisation (WMO) continued in 2009 to establish monitoring systems, using ICTs, forecast and monitor the impact of natural and man-made disasters. The WMO Information System (WIS), which collects and shares weather, water

and climate information for all WMO and related international programmes, continued to improve during 2009, including migrating communication links across the Asia Pacific from Frame Relay to Multi Protocol Layered Switching (MPLS).

117. As a follow up to the 2008 workshop facilitating the use of the Common Alerting Protocol for early warning and emergency applications, WMO in collaboration with ITU and OASIS held a second successful implementers workshop in June 2009. WMO Members, England, France and the ECMWF also organized a successful second workshop in November 2009 on the use of Geographical Information Systems utilising international standards, such as OGC/ISO web mapping and web feature services, for enabling system to system data exchange in support of decision making and warning systems.

118. In support of the development activities of WIS, WMO has utilised online interactive data bases to reduce the cost of collecting and supplying information. This approach has also been adopted in the Public Weather Service initiative to set up a reference data base of warning authorities.

119. Heads of State and Government, Ministers and senior government officials of 160 countries participating in the High-level Segment of World Climate Conference-3 (WCC-3), 31 August to 4 September 2009, decided to establish a Global Framework for Climate Services to strengthen the provision and use of climate predictions, products and information worldwide. The agreement was the culmination of the UN-wide Conference, convened by WMO and partners, which brought together more than 2500 scientists, sector experts and decision-makers to discuss the urgent need for accurate and timely climate information. The Global Framework will be crucial for building climate-resilient societies. Through strengthened observations, research and information systems, as well as new interaction mechanisms for climate information users and providers, the Framework will ensure that all sectors of society have user-friendly climate products that enable them to plan ahead in the face of changing climate conditions.

E-science

120. In 2009, UNESCO has focused its e-science activities on making scientific information affordable and accessible. For instance, progress has been made on improving access to scientific knowledge, with a special attention on developing countries and on addressing "open access" strategies for e-science. Furthermore, an expert meeting, UNESCO's Open Suite Strategy, on this topic was held in Paris, in December 2009.

121. Specifically to Africa, the lack of qualified and trained science teachers is a major obstacle to science education. To this end, the African Virtual Campus (AVC) was set up and its operation expanded through campuses in the Côte d'Ivoire and Cape Verde, in addition to the existing the AVC centres in Benin and Senegal.

122. In 2009, UNIDO partnered up with the World Association of Industrial and Technological Research Organization (WAITRO) to set up Labnetwork.org to support the testing laboratories in various fields, such as environment, metrology, chemical, microbiology, textile, etc., that certify that commodities and products meet the technical requirements and quality standards of importing countries. Other partners include International Laboratory Accreditation Cooperation (ILAC), International Organization for Standardization (ISO), Bureau International des Poids et Mesures (BIPM), EPTIS and COMAR. Labnet helps developing countries to establish the physical and institutional infrastructure to promote international trade.

E-agriculture

123. The e-Agriculture Community of Practice launched in 2007 has grown to over 6,000 registered individuals including development practitioners, policymakers, representatives of farmer organizations, researchers, and information and communication specialists involved

in agriculture and rural development, from more than 150 countries. Despite limited financial resources and an informal management framework, the Community has attracted effective voluntary (non-monetary) contributions and produced a number of policy papers and other relevant documents and meetings reflecting the experiences and expertise of its members.

124. FAO organized and facilitated the following events and conferences: i) Special Session on *Mobile Telephony in Rural Areas*, held in Rome in January 2009, was sponsored by Biodiversity International, the CGIAR ICT-KM programme, IFAD and the WFP; ii) At the WSIS Global Forum in May 2009 in Geneva, the FAO organized an interactive e-Agriculture session about the use of mobile communication to exchange knowledge for livelihood-related tasks; iii) In July 2009, the IAALD Africa Chapter Conference in Accra, Ghana, on the theme *Towards Opening Access to Information & Knowledge in the Agricultural Sciences and Technology in Africa* raised awareness of the importance of opening access to agricultural information and knowledge in Africa among key stakeholders; iv) The eIndia Conference in Hyderabad (August 2009) had a special focus on e-agriculture, designed to start inter-sectoral linkages and also witnessed the presentation of *eAgriculture: Policy-perspective to practice*; In October 2009, the AIBDA, the XVth Meeting of the Inter-American Association of Librarians and Specialists in Agricultural Information, held in Lima, had a special focus on *Access to ICTs for the Improvement of Livelihood in Poor Remote Areas*.

125. FAO also organized online activities and forums during the year 2009. For example, in April 2009, the special online Forum in Spanish language entitled "*Mobile Telephony in Rural Areas*" was a strategic follow up to the special e-Agriculture panel discussion mentioned above. Later in the year, in December 2009, the online Forum "The Role of ICT in Agricultural Value Chains" discussed the key opportunities and challenges of ICT intervention in agricultural value chains with a special focus on rural areas. Moreover, during 2009, the e-Agriculture Community expanded the free e-learning resources available for capacity-building and professional development opportunities for ICT professionals in developing countries.

Cultural diversity and identity, linguistic diversity and local content (C8)

126. To support cultural diversity and identity, linguistic diversity and local content, ITU developed an ICT Portal for indigenous people of the Americas region (http://www.ictindigenousportal.org/), supported by the Navajo Nation, ANACOM and the Inter-tribal council of Brazil, which includes six tailor-made applications on banking, commerce, environment, government, health and learning available both in English and Spanish. During 2009, the portal has been made available to indigenous people from around the world.

127. UNESCO focused its activities on the promotion of cultural diversity and dialogue through the safeguarding of linguistic diversity, formulation of national language policies, and dissemination of local and indigenous content. The UNESCO Intersectoral Platform for Languages and Multilingualism helped launch the World Digital Library and update the Atlas of Endangered Languages and the update of the World Bibliography of Translation (Index Translationum) in 2009.

128. In continuation of the International Year of Languages in 2008, the 2009 International Conference on Linguistic Diversity was held in Bamako, Mali and an updated version of the study on Measuring Linguistic Diversity on the Internet was published in February 2009, "Twelve years of experiences in measuring linguistic diversity on the

Internet: balance and perspectives". Furthermore, UNESCO contributed (September and March 2009) to the United Nations Secretary General report on multilingualism, including in cyberspace[41].

Media (C9)

129. The Council of Europe organized in 2009 over 90 capacity activities in member States to promote Article 10 of the European Convention on Human Rights, many as part of Joint Programmes co-financed by the European Commission.

130. With the support of the International Programme for the Development of Communication (IPDC), UNESCO set up 63 media development partnership projects in developing countries in 2009. In conjunction with Rhodes University (South Africa) and Namibia Polytechnic, UNESCO organized two capacity building meetings in journalism in March 2008 (Grahamstown, South Africa) and in May 2009 (Windhoek, Namibia). The meetings aimed at boosting African journalism capacities through aid, exchange programmes, partnerships, networking and twinning initiatives on a regional and international level.

131. The World Freedom Press day was celebrated by UNESCO in Doha, Qatar, on 2nd and 3rd May 2009, through a conference which discussed media influences on thought and action and its capacity to foster dialogue, understanding and reconciliation.

132. In partnership with UNEP, UNESCO organized in Paris, in September 2009, the first International Conference "Broadcast Media and Climate Change". The conference resulted in the adoption of the Paris Declaration by broadcasters from both developing and developed countries, agreeing on that "access to relevant information on climate change is vital to sustain a living planet and for the survival of human beings".

133. A number of recommendations relevant to providing access to ICTs through terrestrial and satellite radiocommunication and broadcasting infrastructures have been established, and are currently under study. Broadcasting infrastructures are particularly relevant in developing countries and/or underserved areas such as remote and sparsely populated areas. ITU has been in the process of implementing a project on Transition from Analogue to Digital Broadcasting aimed at assisting developing countries, particularly in Africa, to smoothly shift to digital terrestrial broadcasting.

Ethical Dimensions of the Information Society (C10)

134. The Council of Europe is committed to the continued focus of its efforts on human rights issues. In May 2009, the Council of Europe adopted a wide range of public policy frameworks and actions on human rights protection in the Information Society at the inaugural Council of Europe Conference of Ministers in charge of the Media and New Communication Services in Reykjavik. In addition, in July 2009, a recommendation on child protection against harmful online content as well as human rights guidelines for key non state Internet actors namely online games providers and European Internet Service Providers was adopted by the Ministerial Committee.

135. UNESCO's Information for All Programme (IFAP) has set up a working group to examine a draft "Code of Ethics for the Information Society". A seminar and training workshop around the theme "Information Ethics and e-Government", co-organized by UNESCO and the International Centre for Information Ethics and the Government of South

[41] http://documents-dds-ny.un.org/doc/UNDOC/GEN/N09/260/32/pdf/N0926032.pdf?OpenElement

Africa in Pretoria, were held in February 2009. The main goal of the events was to increase transparency of government services provision to the public and businesses.

International and regional cooperation (C11)

136. The ITU continued to foster international and regional cooperation with other international organisations through a series of events and meetings in 2009. For instance, the ITU organized the Global Symposium for Regulators and Global Industry Leaders Forum in Beirut in November 2009, the annual ITU Telecom World, along with the Development Symposium and Youth Forum in Geneva in October 2009, and, additionally, the World Telecommunication Policy Forum in Lisbon in April 2009. Moreover, the ITU conducted five Regional Preparatory Meetings for the 2010 World Telecommunication Conference (WTDC-2010), at which discussions addressed WSIS implementation.

137. With the aim of promoting regional policy dialogue and supporting the capacity building of government officials for effective policy making related to electronic government, DESA organized training workshops in Addis Ababa, Ethiopia, February 2009, on E-Government development in Africa: progress made and challenges ahead, in collaboration with UNECA; in Costa Rica San José, Cost Rica, November 2009, on e/m Government in the LAC Region: Building Capacity in Knowledge Management through Partnerships; and in St. Georges, Grenada, December 2009, on Caribbean regional e-Government strategy: building capacities in knowledge management and promoting in-country training to harmonize national ICT frameworks.

b. Implementation of themes

Financing mechanisms

138. Open Consultations of the United Nations Group on the Information Society (UNGIS) on Financing Mechanisms for Meeting the Challenges of ICT for Development were held in Geneva, Switzerland on 8-9 October 2009. The meeting was hosted by ITU and jointly organized by the UNGIS Chair and Vice-Chairs, i.e. ITU, UNESCO, UNCTAD, UNECA and UNDP. The meeting was open to all WSIS stakeholders. There were 147 participants, representing Governments (49), International Organizations (41), Civil Society (41), Private Sector (11), and others (5). In response to the call for contributions, more than 40 documents had been submitted to the UNGIS Secretariat, which constituted the basis for creation of global repository of electronic materials related to the financing mechanisms for ICT4D, available on the UNGIS web site (www.ungis.org).

139. Participants at the Open Consultations agreed that financing mechanisms for ICT remain crucial and that further efforts are needed to address the access gap, develop new content and applications, and build capacity. It was noted that capacity development and relevant content often lag behind heavy infrastructure and hardware investments and that financing these "soft" and less visible components, which are key to the use of technologies, remains a particular challenge. The difficulty to finance such "soft" areas has highlighted the importance of continuous support to governments, from bilateral and multilateral donor organizations[42].

140. At its twelfth session, the CSTD selected "Improvements and innovations in existing financial mechanisms for ICT" as one of the substantive themes for its 2009-2010 inter-sessional period. To help address this theme, a panel meeting was organized by the CSTD

[42] UNGIS (2009), Draft Chairmen Report on the Open Consultations on Financial Mechanisms for Meeting the Challenges of ICT for Development, www.ungis.org

Secretariat and the Swiss Government in Geneva, Switzerland from 9 to 11 November 2009, with a view to contribute to considerations by the Commission at during its thirteenth session. The CSTD panel meeting was attended by members of the Commission, other national representatives (non-members of the Commission), representatives of UN entities and other international organizations, representatives of NGOs in consultative status with ECOSOC, and representatives of civil society and business entities accredited to WSIS. All the meeting documents are available online at the Commission on Science and Technology for Development website www.unctad.org/cstd.

141. The main findings and recommendations of the Panel meeting on the theme were that 1) financing of ICT for development remains a significant challenge, 2) growing private sector investment in the ICT sector does not obliterate the need to address the remaining access gap, developing local content and applications and building capacity, 3) infrastructure-sharing can be an effective way to reduce costs involved in rolling out "backbone" networks, 4) the lack of available and affordable ICT in low-density areas in developing countries needs to be tackled, 5) the objectives of Universal Service or Access Funds deserve to be re-examined, taking into account of a changing Information Society landscape where access to mobile, Internet and even broadband may become crucial, 6) public investment in more "socially desirable" forms of ICT content and applications, such as e-learning and e-government, is needed, 7) the potential of social networking and user-generated content for information-sharing should be further explored, 8) financing mechanisms may range from large-scale financing sources to small-scale microfinance solutions and 9) involving local users, local content and building local capacity may contribute to the sustainability of ICT projects. To this end, public policies and international coordination are necessary in order to bring current capacity building models up-to-date. National development plans are vital to identify needs and priority areas for financing ICTs.

Internet Governance

Enhanced cooperation

142. In response to the General Assembly resolution 63/202, UNDESA prepared a Report of the Secretary-General on Enhanced cooperation on public policy issues pertaining to the Internet (E/2009/92), which was submitted to ECOSOC, for consideration at its substantive session of 2009 in July. The Council decided to defer consideration of the report to its substantive session of 2010.

143. ECOSOC resolution 2009/7 requests the Secretary-General to report to the Council through the CSTD on the progress made towards enhanced cooperation. To that end, UNDESA sent out in February 2010, invitations to all relevant organisations for updated information, which will be compiled and made available to the CSTD at its 13th session in May 2010, as a conference room paper.

Internet Governance Forum

144. The Internet Governance Forum held its fourth annual session in Sharm El Sheikh, Egypt from 15 to 18 November 2009 with the theme of 'Internet Governance – Creating Opportunities for All'.

145. With more than 1800 participants from 112 countries, the IGF in Sharm El Sheikh had the biggest attendance since its creation. The agenda of the meeting touched on a broad range of public policy issues related to the Internet, in line with the definition of Internet governance as set out in the Tunis Agenda for the Information Society.

146. A recurrent point of discussion was the role of children and young people in creating the information and knowledge society. In this context, special attention was paid to the continued growth of social networks, and the ensuing governance issues that are emerging,

in particular, the need for new approaches regarding privacy and data protection, rules applicable to user-generated content and copyrighted material, and issues of freedom of expression and illegal content

147. One meeting during the session was devoted to stocktaking and looking forward. The Tunis Agenda for the Information Society, endorsed by the General Assembly in resolution 60/252, called for the Secretary-General to examine the desirability of continuation of the Forum within five years of its creation and to make recommendations to the UN Membership in this regard. Formal consultations were chaired by the Under-Secretary General of UNDESA, Mr. Sha Zukang with 47 speakers representing different stakeholder groups delivering statements on this subject. Eight statements of participants who were not given a speaking slot due to time constraints were posted on the IGF website. Two statements were submitted after the session.

148. All but two speakers and all written statements explicitly supported a continuation of the Forum, with many calling for adjustments and improvement in various degrees, while some supported a continuation of the IGF along similar lines to its current form. Suggested changes include the additional functional provisions of IGF that would allow it to produce outputs, recommendations or decisions on a multistakeholder consensus basis, and the financing of the IGF through the regular UN budget. Two speakers were of the view that informal dialogue in the IGF, which has no decision-making authority, should not be seen as a substitute for discussion of global Internet governance in an intergovernmental setting.

149. In 2009, there was also a spread of the multistakeholder approach to dialogue on public policy issues related to the Internet. A number of national and regional initiatives have been modelled on the IGF. Different initiatives were reported from Africa: in Eastern, Western and Middle Africa, as well as in Latin America and the Caribbean. A second meeting of the European Dialogue on Internet Governance (EuroDIG) was held in Geneva. National meetings were held in Italy, Spain, the United Kingdom and the United States.

150. The fifth meeting of the Forum will be held in Vilnius, Lithuania from 14 to17 September 2010. Kenya has made an offer to host the 2011 meeting should the mandate of the IGF be extended.

Measuring ICT for development

151. In 2009, the Partnership on Measuring ICT fro Development welcomed UNDESA as a new member. A revised version of the "Core list of ICT Indicators" along with the background document on "Revisions and Additions to the Core List of ICT Indicators"[43] were presented to the 40th session of the United Nations Statistical Commission, held in February 2009, by the Partnership. UNDESA coordinated the multi stakeholder meeting of the Partnership on Measuring ICT for Development. The discussion focused on how to take forward the development of the analytical framework on measurement of ICT statistics, including e-government indicators in terms of development of a framework of monitoring the WSIS targets and goals till 2015.

152. To measure and to monitor the development of the digital divide, ITU has maintained the World Telecommunication/ICT Indicator Database accessible online through the ICT Eye. To this end, ITU has worked closely with various public administration bodies from Member States, including the Ministries in charge of telecommunication, regulatory agencies, and national statistical offices.

[43] http://www.itu.int/ITU-D/ict/partnership/material/CoreICTIndicators_e_rev2.pdf

153. Furthermore, a new index has been developed in the 2009 edition of the ITU report "Measuring the Information Society". This index, called ICT Development Index (IDI), compares ICT developments in 154 countries over a five-year period from 2002-2007 by combining 11 indicators related to ICT access, use and skills, into a unique index which can be used as a benchmarking tool globally, regionally and at the country level. The publication also contains for the first time the ICT Price Basket which allows countries to measure and compare the relative cost of fixed lines, mobile cellular and fixed broadband.

154. In February 2009, UNCTAD released the revised *Manual for the Production of Statistics on the Information Economy 2009*. The ITU released its *Manual for Measuring ICT Access and use by Households and Individuals*. Based on these two reference documents, the two organizations delivered several regional training courses in the Caribbean (January, ITU, UNCTAD and ECLAC); in Africa (July, ITU, UNCTAD, ECA); in Asia-Pacific (October, ITU); and in Africa (December, UNCTAD, ECA). In addition, ITU and UNCTAD organized a 5-day training of trainers on ICT statistics in Geneva in June 2009. ESCWA and ECLAC conducted regional workshops on ICT measurement.

155. The UNESCO Institute for Statistics established an international Working Group on ICT Statistics in education (WISE), comprising representatives from 25 countries, in order to validate UIS methodological tools (a guide to ICT for education indicators, survey materials) and a prototype questionnaire on ICT in education.

156. The Partnership organized a session at the WSIS Forum 2009 in Geneva on the topic of measuring ICT impact and its importance in helping to assess and set priorities for ICT policies.

157. As part of the work undertaken within the framework of the Partnership, the Task Group on e-Government indicators, which is coordinated by ECA to measure use of ICT in government, has agreed at the end of 2009 on a core list of indicators. A consultancy firm from Finland has been contracted by ECA to develop in 2010 a framework and manual for implementing these indicators.

III. Findings and recommendations

158. E-government has become a powerful tool of development and essential to the achievement of the MDGs. Countries that have embraced e-government have experienced its transformative power – in revitalizing public administration, overhauling public management, fostering inclusive leadership and moving civil service towards higher efficiency, transparency and accountability. Even in small, least developed countries with limited economies of scale, the mobile revolution and growth of high-speed broadband and wireless access have begun to have a measurable economic impact, reinforced by expansion of e-government capacity in the public sector.

159. Highlighted by many agencies are the need for capacity-building, policy, content and indicators in order to build a more inclusive society and bridge the digital divide. In particular, capacity-building programmes at the international and regional levels are important.

160. Bridging the digital divide is a priority area of concern for all regional commissions. The UNECE notes that the gap between the most and least developed European countries in terms of broadband penetration is widening. Similarly, ECLAC observes the urgent need to reduce the digital divide in terms of access and quality of access in building a more inclusive information society. In the ESCAP region, the level and speed of ICT uptake varies considerably. Remote and poor rural areas are particularly underserved and usage is less prevalent among women and certain disadvantaged communities.

161. Agencies underscore that bridging the digital divide requires both policies that foster competitiveness and strategies that encourage optimal infrastructure development in the telecom sector. In addition, they urge policy makers to focus on strengthening instruments and building institutions for implementing regional initiatives and national and sector ICT policies. Public policies can play a significant role in encouraging foreign direct investment in the ICT sector; increasing national budgets for ICT as well as encouraging research in science and technology. Furthermore, agencies reiterate that private sector is a major driver of ICT adoption and diffusion; public-private partnerships maybe an effective tool for improving local content development, connectivity and capabilities.

162. DESA, through its UN e-Government Survey 2010, has shown that public trust can be gained through increased transparency, such as the free sharing of government data. Increased transparency may also support and strengthen public administration action and policy decisions in carrying out regulatory reforms. E-government can also add agility to public service delivery to help Governments respond to an expanded set of demands even as revenues fall short.

163. The costs associated with telecommunication infrastructure and human capitals continue to impede e-government development. However, effective strategies and legal frameworks can compensate significantly, even in least developed countries. Those who are able to harness the potential of expanded broadband access in developed regions and mobile cellular networks in developing countries to advance the United Nations development agenda have much to gain going forward.

164. The ECA notes that many African countries have made great progress towards harmonizing national e-strategies and plans as well as building sub-regional framework for regional economic integration.

165. Many agencies have observed that active involvements, as well as an alignment of commitments from a wide range of stakeholders, are critical to the successful implementation of WSIS objectives.

166. The World Bank calls for bolstered relations with its external partners, both public and private, and with civil society and citizens. It further notes that strategies for ICT need to be aligned with those for climate change, environment, energy, education and agriculture.

167. In terms of obstacles, UNESCO observes that many people from developing countries cannot attend the WSIS Forum meetings held in Geneva remained due to funding difficulties. In view of this, the UNESCO has developed an online platform in 2009 (www.wsis-community.org). The platform allows for a larger involvement of all stakeholders in the WSIS implementation and it is also being used for the preparation for WSIS Forum meetings in Geneva.

168. UNESCO further notes that one challenge associated with measurements across its Action Lines is standardization which ensures comparable collection of data, and the statistical capacity gaps that exist among countries. To measure "soft" components or impact poses even greater challenge.

169. With limited financial resources but strong voluntary contributions the e-Agriculture Community of Practice led by FAO has continued to grow in size and maintain a constant level of activity. However, the lack of a formal structure and a dedicated budget limit the Community's ability to engage more countries and practitioners, expand the sharing of leading practices, and constrain the development of a truly multi-lingual platform. In the case of the UPU, which is one of the smaller specialized agencies of the UN, in-kind contributions from institutions in the development community and the private sector are vital sources of funding for initiatives and projects.

170. As in previous years, WHO notes that continuing challenges to achieving widespread health information systems include the design, governance, funding, and ability to manage complex ICT deployments remain. On the technical level, interoperability and standards remain a serious challenge for the sector as conflicting standards, versions and implementations exist, with a clear way forward yet to be agreed. The health sector may need to invest considerable funds to ensure the interoperability that is required for efficient and effective exchange of health data in critical areas.

171. UNIDO observes that in order to increase the outreach of its ICT-based technical assistance programmes and to promote affordable, innovative and relevant solutions to SMEs in developing countries, partnerships between international organizations, public and private sectors and all relevant stakeholders should be consolidated.

172. SBC notes that the introduction of a life-cycle approach for ICT equipment needs concerted efforts of producers, users, recycling and disposal operators and a robust and sustainable financing system. Any financing mechanism for meeting the challenges of ICT for development must consider the whole life-cycle of the equipment involved to ensure that solving the digital divide problem does not result in health and pollution problems.